

4.10 COMPARISON OF ALTERNATIVES

The potentially significant environmental impacts of the proposed Project and alternatives are discussed in detail in the preceding sections (Sections 4.1 through 4.9). A brief comparison of the impacts of the proposed Project and alternative landings is provided below by issue area and summarized in Table 4.10-1 at the end of this section. The No Project/Action Alternatives is not included in this comparison because it involves no new activity and results in no new environmental impacts. The environmentally superior alternative is identified in Section 4.10.2.

4.10.1 Summary of Impacts of the Project and Alternative Landings

Air Quality

The air quality impacts of the proposed Project and alternative landings are similar. Exhaust emissions would be generated during installation by operation of the cable laying vessel, HDD activities, and equipment and material deliveries. For the proposed Project and the alternative landings, these impacts can be reduced to a less than significant level with the same mitigation measures. Air pollutant emissions during the operational phase of the MARS cabled observatory would not be significant.

Commercial and Recreational Fisheries

The impacts of the proposed Project and alternative landings on commercial and recreational fisheries are basically the same. During cable laying operations, the presence of the cable installation vessel and equipment would preclude fishing within a limited area for a temporary period. During the operational phase of the MARS cabled observatory, commercial fisheries that use equipment that contacts the bottom could potentially snag unburied portions of the cable, causing damage to or loss of their fishing gear, or damage to the cable. These impacts are not considered significant for the proposed Project or the alternative landings.

Cultural Resources

The potential impacts of the proposed Project and alternative landings on cultural resources are identical. There is a possibility that cable installation could disturb unknown shipwrecks that may lie along the sea route. For the proposed Project and the alternatives, this impact can be reduced to a less than significant level with the same mitigation measures.

Geology and Soils

The geology and soils impacts of the proposed Project and alternative landings are very similar. None of the identified impacts on geology and soils are significant. Under Alternative 2, the potential for temporary erosion impacts during cable installation are less than the proposed Project and Alternative 1 because it would not involve a HDD staging and drilling site; however, erosion impacts are considered less than significant for the proposed Project as well as the alternative landings.

Marine and Near-Coastal Biological Resources

The impacts of the proposed Project and alternative landings on marine biological resources are basically the same. During cable installation, fragile marine organisms on the bottom could be dislodged or crushed. In addition, marine mammals could become entangled in the cable or other lines, be killed or injured by collision with the cable lay vessel or a support vessel, or disturbed by the noise and activity of the cable laying operations. Seabirds and shorebirds could also be harmed or disturbed by cable installation activities. With the exception of marine mammal entanglement or collisions, these impacts are considered either remote possibilities or minor disturbances and, therefore, are not significant. Impacts resulting from marine mammal entanglement or vessel collisions could be mitigated to less than significant levels for all alternatives.

Marine Water and Sediment Quality and Oceanography

The impacts of the proposed Project and alternative landings on marine water quality and oceanography are very similar. Under the proposed Project and the alternative landings, cable installation, removal, and repair operations would resuspend bottom sediments near the cable route. In addition, fuel or hydraulic fluid spills from cable installation vessels could degrade water quality. These impacts are not significant and do not require mitigation. With the proposed Project and Alternative Landing Area 1, HDD operations could degrade nearshore water and sediment quality, but this impact would not occur under Alternative Landing Area 2, which does not involve HDD. This impact is not significant for the proposed Project or Alternative Landing Area 1.

Marine Vessel Transportation

With the proposed Project and the alternative landings, the presence of vessels used during construction would not substantially increase the potential for vessel accidents in Monterey Bay. Similarly, vessels used during operations would not increase the potential for vessel accidents. However, under Alternative Landing Areas 1 and 2, a significant and unavoidable impact would occur during cable installation and

decommissioning when the cable laying vessel would need to be brought near shore, blocking access to Moss Landing Harbor during both the pre-lay grapnel run and during main cable lay operations. This would probably cause several hours of delays in vessel traffic entering and leaving the Harbor. When not blocking the Harbor entrance, the presence of the cable laying vessel in the near vicinity of Moss Landing Harbor, which is an area with heavy vessel traffic and only a limited area for maneuvering, could increase the potential for vessel accidents. These impacts would not be experienced with the proposed Project because the cable laying vessel would not need to operate so close to shore based on the proposed HDD drill path.

Noise

Noise impacts would be similar for the proposed Project and alternative landings. For the proposed Project and Alternative Landing Area 1, noise would be generated during cable installation by HDD equipment, drill site preparation, drilling fluid pumping, site cleanup, and the on-road vehicles traveling to the staging area. Alternative Landing Area 2 would generate noise from construction equipment at the MLML Pier, but would not involve noise associated with HDD activities. For the proposed Project as well as both alternative landings, these construction-related noise impacts can be reduced to a less than significant level with the implementation of the same mitigation measures. In addition, underwater noise would be generated during cable installation by marine vessels, such as work boats and the cable-laying vessel, and by the main lay cable plow. These vessel-related noise impacts would be less than significant for the proposed Project and the alternative landings.

Environmental Justice

There would be no environmental justice impacts with the proposed Project or the alternative landings.

4.10.2 Environmentally Superior Alternative

The State CEQA Guidelines [14 CCR §15126.6 (e)(2)] state, in part, that “If the environmentally superior alternative is the “No Project” alternative, the EIR shall also identify an environmentally superior alternative *among the other alternatives*.” (Emphasis added). The NEPA CEQ regulations (40 CFR §1505.2) also require the identification of the “environmentally preferable” alternative, but this is required only for the Record of Decision (ROD).

Overall, the impacts of the landing area of the proposed Project and the alternative landing areas (except the No Project/Action Alternative) are very similar. They differ

primarily with regard to the HDD that is included in the proposed Project and Alternative Landing Area 1 and that is excluded from Alternative Landing Area 2. HDD has the potential to result in certain adverse, but less than significant impacts, including water quality impacts associated with erosion and accidental release of drilling mud. However, HDD as utilized in the proposed Project would avoid marine traffic delays at the entrance to Moss Landing Harbor and reduce the potential for vessel accidents.

The impacts on marine traffic due to the presence of the cable laying vessel and support vessels near the Moss Landing Harbor entrance under both Alternative Landing Areas 1 and 2 are considered significant (Class I). With the exception of Impacts GEO-4 and MAR-2 (see Table ES-1), in which Alternative Landing Area 2 has no impact, the remaining impacts are the same for each alternative. On the basis of this comparison, Alternative Landing Area 2 is the environmentally superior alternative

Table 4.10-1. Comparison Matrix: Proposed Project and Alternatives

Issue Area	Proposed Project	Alternative Landing Area 1: Duke Pipeline to MBARI Property	Alternative Landing Area 2: Moss Landing Marine Lab Pier
Air Quality	Vessels used for construction and decommissioning could temporarily exceed daily emission thresholds for ozone precursors and particulate matter within the MBUAPCD. Potentially Significant, Class II	Similar to the proposed Project. Potentially Significant, Class II	Similar to the proposed Project. Potentially Significant, Class II
	Minor dust emissions from on-land activities. Less Than Significant, Class III	On-land construction equipment and dust emissions from on-land activities would be a slightly shorter duration than the proposed Project because of shorter HDD. Less Than Significant, Class III	On-land construction equipment and dust emissions from on-land activities would be a slightly shorter duration than the proposed Project. Less Than Significant, Class III
	Use of vessels and power provided during operation could cause emissions of ozone precursors and particulate matter. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III
Commercial and Recreational Fisheries	The presence of the cable installation vessel and equipment would preclude fishing within a limited area (~1 mile; 1.6 km) for a temporary period (a few hours to several days). Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III
	Commercial fisheries that use equipment that contacts the bottom could potentially snag unburied portions of the cable, causing damage to or loss of their fishing gear, or damage to the cable. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III

4.10 Comparison of Alternatives

Issue Area	Proposed Project	Alternative Landing Area 1: Duke Pipeline to MBARI Property	Alternative Landing Area 2: Moss Landing Marine Lab Pier
Cultural Resources	The Project could disturb unknown prehistoric resources that may lie along the sea route between the +24.5-mile (39.4-km) and +29.0-mile (46.7-km) marks. Potentially Significant, Class II	Similar to the proposed Project. Potentially Significant, Class II	Similar to the proposed Project. Potentially Significant, Class II
Geology and Soils	Potential for marine landslides and slumping triggered by cable installation. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III
	Cable repairs along the sea route would result in no more alteration of bottom topography or trigger submarine slope failures than installation activities. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III
	Poorly consolidated nearshore sediments could result in HDD frac-outs. Less Than Significant, Class III	Because this alternative involves both terrestrial drilling and receiving sites, potential impacts would be slightly greater than the proposed Project. Less Than Significant, Class III	Because this alternative does not involve HDD, potential terrestrial erosion impacts associated with HDD would not occur. No Impact
	The Project would result in limited exposure of people to increased risk of harm from seismic events beyond the construction period. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III
	Subsea cable installation would not result in substantial alteration of topography Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III

Issue Area	Proposed Project	Alternative Landing Area 1: Duke Pipeline to MBARI Property	Alternative Landing Area 2: Moss Landing Marine Lab Pier
	Potential exposure and/or damage of the nearshore conduit and cable, by either tidal scour or landward transgression of Monterey Canyon, would not adversely affect the geologic environment. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III
	Conduit or cable repairs at the landing area would result in no more alteration of bottom topography or trigger slope failures than installation activities. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III
	Cable removal would result in similar or less impacts than those described for cable installation. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III
Marine and Near-Coastal Biological Resources	During the pre-lay grapnel run, cable installation, post-lay burial, and decommissioning the substrate and fragile organisms could be dislodged or crushed. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III
	A marine mammal could become entangled in the cable or other lines during cable laying installations. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III
	A marine mammal could be killed or injured by collision with the cable lay vessel or a support vessel. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III

4.10 Comparison of Alternatives

Issue Area	Proposed Project	Alternative Landing Area 1: Duke Pipeline to MBARI Property	Alternative Landing Area 2: Moss Landing Marine Lab Pier
	Marine mammals may be disturbed by the noise and activity of the cable laying operations. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III
	An accidental release of fuel to the marine environment could harm marine mammals. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III
	Marine mammals could become entangled in the cable during repair operations. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III
	Seabirds in the vicinity of the cable laying or repair operations may experience some disturbance by the vessels and activities. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III
	An accidental release of fuel to the marine environment could harm seabirds and shorebirds. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III
	Marine mammals and seabirds listed as endangered or threatened could be entangled in the cable, harmed by the cable lay vessel or support vessel, or otherwise disturbed by cable lay operations. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III

Issue Area	Proposed Project	Alternative Landing Area 1: Duke Pipeline to MBARI Property	Alternative Landing Area 2: Moss Landing Marine Lab Pier
	Substrate and fragile organisms in nearshore areas could be damaged by the pre-lay grapnel run, cable installation, post-lay burial, or HDD. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	The impacts would be similar to the proposed Project except that there would be no potential for damage from HDD activities. Less Than Significant, Class III
	An accidental release of drilling mud could degrade foraging habit for shorebirds and sea otters, and haul-out areas for harbor seals. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Because this alternative does not involve HDD, potential impacts associated with accidental release of drilling mud would not occur. No Impact
	An accidental release of drilling mud could degrade foraging areas for sea otters and western snowy plovers. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Because this alternative does not involve HDD, potential impacts associated with accidental release of drilling mud would not occur. No Impact
Marine Water and Sediment Quality and Oceanography	Cable installation, removal, and repair operations would resuspend bottom sediments near the cable route. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III
	HDD operations would degrade nearshore water and sediment quality. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Because this alternative does not involve HDD, potential nearshore water and sediment quality impacts associated with HDD would not occur. No Impact
	Fuel or hydraulic fluid spills from cable installation vessels would degrade water quality. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III

4.10 Comparison of Alternatives

Issue Area	Proposed Project	Alternative Landing Area 1: Duke Pipeline to MBARI Property	Alternative Landing Area 2: Moss Landing Marine Lab Pier
Marine Vessel Transportation	Vessels used during cable installation and decommissioning could increase the potential for vessel accidents in Monterey Bay. Less Than Significant, Class III	Impacts would be greater than the proposed Project because of the need for vessels to operate near the entrance of Moss Landing Harbor. Potentially Significant, Class II	Impacts would be greater than the proposed Project because of the need for vessels to operate near the entrance of Moss Landing Harbor. Potentially Significant, Class II
	Vessels used during Project operation could increase the potential for vessel accidents in Monterey Bay. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III
	Vessels used during cable removal could increase the potential for vessel accidents in Monterey Bay. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III
	Potential cumulatively increased risk of marine vessel conflict during construction. Potentially Significant, Class II	The presence of vessels used during construction and decommissioning could block access to Moss Landing Harbor and cause substantial delays to other vessels. Potentially Significant, Class II	The presence of vessels used during construction and decommissioning could block access to Moss Landing Harbor and cause substantial delays to other vessels. Potentially Significant, Class II
Noise	Construction equipment could cause noise levels exceeding the 85 dBA limit of the Monterey County Noise Control Ordinance. Potentially Significant, Class II	Similar to the proposed Project. Potentially Significant, Class II	Similar to the proposed Project. Potentially Significant, Class II
	Use of vessels and scientific equipment and instrumentation during operation could create noise. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III	Similar to the proposed Project. Less Than Significant, Class III

Issue Area	Proposed Project	Alternative Landing Area 1: Duke Pipeline to MBARI Property	Alternative Landing Area 2: Moss Landing Marine Lab Pier
Environmental Justice	Construction and operation of the proposed Project would not result in disproportionate impacts on minority and/or low-income populations. No Impact	Same as the proposed Project. No Impact	Same as the proposed Project. No Impact
	Construction and operation of the proposed Project would not result in a disproportionate decrease in employment and/or economic base of minority and/or low-income populations. No Impact	Same as the proposed Project. No Impact	Same as the proposed Project. No Impact